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ABSTRACT

The Cooperative Graduate Program for Training in Educational Research at Lehigh University continued for the fourth year during the grant period of September 1, 1969 through August 31, 1970 without substantial change. The program objectives were 1) to prepare students to function effectively as specialists in educational research and measurement in the public schools, to evaluate educational programs, to initiate and carry out studies and report findings in a clear and objective fashion, and to act as research resource persons to other professionals in the schools they serve; 2) to foster an intelligent dependence on research as a means of making educational decisions on the part of school personnel and to have them look to the university and its graduates for guidance in relevant situations; and 3) to qualify trainees for the Ed. D. degree with a specialty in educational measurement and research. During the 12-month period of the grant, 12 trainees were supported by federal funds in the doctoral program. Of the 12, all completed the course work requirements, met all the examination requirements, and satisfied the residence requirement. Four received the Ed.D. degree. Of the balance, all but one were engaged in writing the dissertation, and it was anticipated that the degree would be awarded in 1971 in seven of these eight cases. (MBM)

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FINAL REPORT
Project No. 6-1757
Grant No. OEG-0-8-061757-3646(010)

COOPERATIVE GRADUATE PROGRAM FOR TRAINING IN EDUCATIONAL RESEARCH

Paul VanR. Miller
Lehigh University
Bethlehem, Pennsylvania 18015

March 1971

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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Paul VanR. Miller

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Bethlehem, Pennsylvania 18015

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Contents

	Page
Summary	1
Introduction	1
Methods	2
Program Objectives	2
Course Requirements	2
Faculty	3
Trainees	4
Selection	4
Enrollment	4
Practicum Training Arrangements	5
Results	15
Conclusions	16

SUMMARY

The Cooperative Graduate Program for Training in Educational Research continued for the fourth year during the grant period of September 1, 1969 through August 31, 1970 without substantial change. During the twelve-month period of the grant, 12 trainees were supported by federal funds in the doctoral program. Of the twelve all have completed course work requirements, met all the examination requirements and satisfied the residence requirement. Four have received the Ed.D. degree. Of the balance, all but one are engaged in writing the dissertation and it is anticipated that the degree (Ed.D.) will be awarded in 1971, in seven of these eight cases.

INTRODUCTION

During the Academic Year 1969-1970 Lehigh University continued, for the fourth consecutive year, the Cooperative Graduate Program for Training in Educational Research. This report will concern itself with accomplishments during the grant period 09/01/69 through 08/31/70. Inasmuch as the training program is continuous, this report cannot be definitive in terms of findings. Suffice it for now to say that the faculty and staff were well pleased with the year's results which will be dealt with in greater detail in sections below.

METHODS

A. Program Objectives

1. To prepare students to function effectively as specialists in educational research and measurement in the public schools; to evaluate educational programs, to initiate and carry out studies and report findings in a clear and objective fashion, and to act as research resource persons to other professionals in the schools they serve.

2. To foster an intelligent dependence on research as a means of making educational decisions on the part of school personnel and to have them look to the University and its graduates for guidance in relevant situations.

3. The degree sought by the trainees is the Ed.D. with a specialty in educational measurement and research.

There have been no fundamental changes in the objectives, curriculum, faculty assignments nor practicum experiences other than those which were reported in the Progress Report submitted last year (October 1969), and which have been implemented.

B. Course Requirements

Course Number	Name of Course	Semester Credits	Class Hours
Educ. 426	Independent Study & Research	3-15	45-225
Educ. 455	Statistics I	3	45
Educ. 456	Statistics II	3	45
Educ. 457	Statistics III	3	45

Course Number	Name of Course	Semester Credits	Class Hours
Educ. 458	Statistics IV	3	45
Educ. 472	Educational Tests & Measurements	3	45
Educ. 494	Field Work	3-6	45-90
Educ. 496	Advanced Seminar in Research Methods	6	90
Educ. 498	Internship	3-9	45-135
Psych. 454	Theories of Learning	3	45

Courses recommended for all trainees and taken by most

Course Number	Name of Course	Semester Credits	Class Hours
Phil. 301	Philosophy of the Social Sciences	3	45
Psych. 435	Social Psychology	3	45

Electives

Trainees are encouraged to elect courses in other divisions of the Graduate School of the University according to their individual needs with respect to the nature of their research interests. These have included courses in Counseling, Psychology, Social Relations, Linguistics, Information Sciences, and Mathematics.

C. Faculty

The two faculty members principally involved in the training program are Dr. Merle W. Tate and Dr. Paul V. Miller. Other faculty members serve the program in various supporting roles as teachers and advisors.

D. Trainees

1. Selection: Before being selected, each applicant must present himself for an interview, submit complete academic transcripts, a vita, score reports on the GRE aptitude tests and the Miller Analogies Test, and two letters of recommendation from those acquainted with his professional work. In addition, because ours is a two year program, he must have a Master's degree (or the equivalent in graduate credits). We also require that he have a minimum of two years of teaching or related educational experience (e.g. Counseling). Further, he must have, or we must provide, a sponsor to provide the field work (practicum) experience.

. We tend to rely most heavily on the Quantitative score of the GRE which has proved to be the best single predictor of student academic success. Of secondary value is the undergraduate transcript, considered in light of the particular institution attended. We give credence to recommendations only when they come from people we know and respect. The graduate transcript is usually worthless as a quantitative predictor but is useful in assessing preparation for the program, or more especially lack thereof. The verbal scores (GRE (V) and MAT), if low, suggest that the student will have trouble in the writing of the dissertation.

The major change proposed will be in the more critical selection and evaluation of the sponsoring educational agency. Whereas for some students, this has been an unusually worthwhile educational experience, for others it has been of less value. In most cases, it is the individual in the sponsoring school who provides the practicum supervision that is the critical variable.

2. Enrollment

Trainee	GRE-V	GRE-Q	M.A.T.*	UGPA*	GGPA*
1. Bartol, Henry	660	750	84	2.55	3.64
2. Bolig, John R.	640	620	85	2.08	3.10
3. Campbell, James R.	460	490	47	2.93	3.27

Trainee	GRE-V	GRE-Q	M.A.T.*	UGPA*	GGPA*
4. Conahan, Mary A.	510	710	65	2.33	3.40
5. Hegedus, Rita A.	700	700	74	3.16	3.70
6. Krupka, John G.	460	640	60	2.05	2.76
7. Lareau, Edward H.	500	750	77	2.27	3.29
8. March, David L.	530	750	52	2.64	2.93
9. Moats, Calvin W.	640	640	60	2.65	3.36
10. Mohrmann, Jeanne W.	670	570	-	3.47	3.25
11. Puglisi, Donald F.	500	720	66	2.92	3.33
12. Valdes, Alice L.	710	630	74	2.06	3.47

*M.A.T. = Miller Analogies Test
*UGPA = Undergraduate Grade Point Average
*GGPA = Graduate (Master) Grade Point Average

E. Practicum Training Arrangements

1. Each trainee is assigned as a research intern to a cooperating school district or other educational agency. During his first year he spends 2 days per week with the sponsor and 4 days per week at Lehigh. During the second year, he spends 3 days per week with the sponsor and 3 days per week at Lehigh. During the summer sessions, he spends full-time at Lehigh. The detailed descriptions of practicum training arrangements for each trainee follow.

Trainee: Bartol, Henry J.

Sponsor: American Museum of Natural History--
Hayden Planetarium
81st Street at Central Park West
New York, New York 10024

Supervisor: Dr. Franklyn M. Branley

Role: Planetarium Intern--Responsible for research into all phases of the educational program of the planetarium. Including:

(a) school shows (serving about 300,000 children annually)
(b) N.S.F. Summer Science Training Program for high school students
(c) planetarium programs

Completed and present work includes:

(a) A study of NSF Summer Science Training Program graduates from 1964 to 1967.
(b) A survey of all 112 public show planetariums in the U.S. and Canada to determine general objectives.
(c) A survey of all school and public show planetariums in the U.S. and Canada to compare opinions on utilization of planetariums for education.

Facilities: Full facilities of the Hayden Planetarium are available including: records of previous programs, library, office space, and secretarial assistance.

Trainee: Bolig, John R.

Sponsor: North Penn School District
Lansdale, Pennsylvania

Supervisor: Dr. James Replogle

Role: Research Intern--Assignments to date have been:

(1) Determined value of Metropolitan Readiness Test for kindergarten testing
(2) Surveyed all new homes in the district to determine number of children per home for population projections.

(3) Studied use of electric typewriters to teach retarded children
(4) Used $28,000 USOE grant to help establish summer school program for high school dropouts
(5) Continued work with dropouts, established work study program for fall 1969. Spending $12,000 USOE grant more.
(6) Re-studied MRT 1969
(7) Re-surveyed population 1969
(8) Studied reasons for poor math scores on achievement tests, grades 2, 4, and 6.
(9) Studied possibilities of compensating teachers for graduate credits.
(10) Trained teachers to uniformly grade essays by children to measure growth in creative writing--failed.

Facilities: Share an office with several administrators. Calculator, telephone, secretary, access to computer, copying machines, keypunch machines.

Trainee: Campbell, James R.

Sponsor: Research Division
Delaware Department of Public Instruction
Old State House Annex
Dover, Delaware

Supervisor: Dr. Wilmer E. Wise

Role: Research Intern--Upon early termination of the Coordinator of the Occupational Research Coordinating Unit, Mr. Campbell assumed duties of Acting Coordinator, Occupational Research Coordinating Unit, Research Division, Delaware Department of Public Instruction.

Duties in Occupational Research:
(1) Review of proposals requesting federal funds for exemplary and pilot programs
(2) Dissemination of educational literature pertaining to research on program design, new teaching methods, and research theories

Research Projects Completed or in Process:

(1) Digest of Educational Information, published December 1968, Delaware Department of Public Instruction

(2) Survey of Leadership Influence Exercised by Personnel of the Delaware Department of Public Instruction. Published September 1969, Delaware Department of Public Instruction

(3) Consulted on Design of School Work Experience Program (SWEP), Marshallton School District, Wilmington, Delaware. "A work-study experience for potential junior high school dropouts."

(4) Consulted on Design of Elementary Career Exploration Program. Indian River School District, Roxana, Delaware. "An exploratory career selection program for the disadvantaged K-6 students to develop early exposure to the world of work."

(5) Consulted on Design for Economic and Vocational Opportunities Survey. Cape Henlopen School District, Nassau, Delaware. "An extensive survey of student interests, teaching expertise, available facilities, and projected vocational opportunities in South East Delaware to determine priorities and implementation for vocational course offerings at the high school level."--in process

(6) Special Survey on Projected Enrollments and Substandard Teachers in the State of Delaware

Facilities: Personnel: Director of Research, Supervisor of Statistics, Supervisor of Evaluation, Specialist--Systems Analysis, Specialist--Statistics, and Secretaries.

All equipment available to Department of Public Instruction Staff Members. I.B.M. 1401 16K Computer and auxiliary data processing equipment.

Trainee: Conahan, Mary A.

Sponsor: Northampton County Schools
TEAMS Project (EPD-B2)
School of Education
Lehigh University
Bethlehem, Pennsylvania 18015

Supervisor: Dr. Warren Maurer, Director

Role:
(a) To plan the evaluation of the project
(b) To design or assist in the design of instruments not available on the market
(c) To supervise the collection of data
(d) To interpret the data
(e) To write the project evaluation

Facilities: Use of: office space, secretary, research library, calculators, teletype, and use of CDC 6400 computer

Trainee: Hegedus, Rita

Sponsor: Pottsgrove School District
Kauffman Road, Route 18
Pottstown, Pennsylvania

Supervisor: Dr. Jacob E. Dailey, Superintendent

Role: Research Intern--The first year major responsibility was a report on the progress of the modern mathematics curriculum in the Pottsgrove System. This included an extensive review of the literature, interviews with teachers on all grade levels, and interviews with mathematics coordinators from other districts. Directions for evaluation and suggestions for growth were given. The first step of a dropout study, identifying the dropout in the district, was also taken. The trainee is currently assisting the Title I - Elementary Guidance Counselor with the Extended Home Guidance Program in an effort to evaluate the effectiveness of the program.

Facilities: The trainee shares an office with the director and has access to office equipment, and secretarial assistance.

Trainee: Krupka, John G.

Sponsor: Northampton County Area Community College
Bethlehem, Pennsylvania

Supervisor: Mr. Donald Hagen, Dean of Technologies and Development

Role: Instructional Intern--In that position the trainee has set up the Office of Institutional Research and has done educational research on problems involving the community college. In addition to defining institutional research and establishing the job description of the Director of Institutional Research, he has worked on such studies as:

(1) A Community College Remedial Program--A Description and Evaluation
(2) A Survey to Determine the Need of Dental Assistants in the Lehigh Valley
(3) The Effectiveness of Programmed Instruction in the Teaching of Shorthand
(4) Factors Associated with Under-and Over-Achievement of Community College Freshmen

Facilities: Office space, use of calculators, and use of computer facilities.

Trainee: Lareau, Edward H.

Sponsor: Research and Planning Office
Bucks County Public Schools
Doylestown, Pennsylvania

Supervisor: Mr. Ronald E. Lesher, Research Director

Role: Research Intern--As part of the research group, major responsibilities were in the areas of:

(a) Research design and evaluation of data in a Reading Readiness Program
(b) Evaluation of data obtained in a Personalized Educational Prescription Program (PEP).

Other responsibilities performed were:

(a) Statistical analyses on data collected by various teachers or administrators throughout the school districts served by the Bucks County Public School Office

(b) Administering and collecting Critical Incident questionnaires related to the Quality Assessment Program in Education in Pennsylvania

Facilities: Secretarial services, library services including access to R.I.S.E., keypunch and access to computer.

Trainee: March, David L.

Sponsor: Lehigh University Computing Center
Lehigh University
Bethlehem, Pennsylvania

Supervisor: Mr. John Smith, Manager,
Computing Center

Role: Research Assistant

(a) Aid students and faculty with computing problems

(b) Test and "debug" statistical programs and packages

(c) Participate in the development and specification of new software packages

(d) Train and supervise new graduate assistants

(e) Tested and organized the "BMD" Statistical Package for use by University students and faculty.

(f) Developed a program for computing the exact multinomial distribution for comparison with the chi-square statistic. The results of this program were used in conjunction with research being conducted by Dr. Merle Tate (Project No. 8-B-023, U.S. Department of Health, Education, and Welfare).

(g) Provided software and advice on a computer analysis of a questionnaire in conjunction with the University's "Co-Ed" study.

(h) Assisted with establishing and administering a training program for new graduate assistants.

Current Practicum Experience:

(i) Assisting with the specifications and programming of a computerized system for maintaining the Computing Center's software library.

(j) Assisting with writing the specifications for a computerized job placement service.

Facilities: Direct access to CDC 6400 computing system in batch and through remote time-shared terminals. Secretarial pool for keypunching and other clerical services. Availability of systems and applications programmers and consultation with university faculty engaged in computer-related research.

Trainee: Moats, C. William

Sponsor: Research and Planning Division
Bucks County Public Schools
110A - Chapman Lane
Doylestown, Pennsylvania 18901

Supervisor: Dr. Albert Neiman, Assistant Superintendent

Role: Research Intern--Responsibilities include:

(a) An evaluation of three extended reading readiness programs

(b) Attending various evaluation meetings of Intensification of the Learning Process Project (PEP) and various planning meetings of the Quality Education Project

(c) An item analysis of a test for the Curriculum Division of the county

(d) Analysis of data from the PEP project.

Facilities: Secretary pool, desk space and office materials, calculator, copy machine, professional library and the personal libraries of staff, and services of R.I.S.E.

Trainee: Mohrmann, Jeanne W.

Sponsor: Division of Research
Department of Public Instruction
Dover, Delaware

Supervisor: Dr. Wilmer Wise

Role: Research Intern--Responsibilities include:

(a) Designing and conducting studies into various aspects of public instruction. This involves developing sampling frames, questionnaires, and methods for data retrieval of such information as well as methods of statistical analysis of such information.

(b) Evaluation of educational television in the State of Delaware

Facilities: Secretarial assistance, adding machines, calculators and the use of the Department's computer.

Trainee: Puglisi, Donald F.

Sponsor: Abington School District
Susquehanna Road
Abington, Pennsylvania 19001

Supervisor: Dr. Carl Hoffman, Assistant Superintendent

Role: Research Intern--His duties are to provide services in the areas of research design, analysis, and interpretation, as well as evaluation of existing programs as requested by district level administrators and school principals.

Completed and present work includes:

(a) A study involving the attitude of sixth grade teachers toward modern mathematics and toward traditional mathematics, and the relationship of teacher attitude toward mathematics and student achievement in mathematics.

(b) Investigation of diagnostic validity of the Titmus Vision Test versus the Snellen Vision Test
(c) Investigation of possible effects of the Head Start Program on Student success in and adjustment to the first year of school.

Facilities: Office space, calculator, secretarial assistance.

Trainee: Valdes, Alice L.

Sponsor: Wilmington Public Schools
Wilmington, Delaware

Supervisor: Dr. John G. Parres

Role: Research Intern
(a) Evaluation of the Title I Reading Improvement Program
(b) Providing assistance in interpretation and compilation of statistics obtained from the regular, yearly testing program of the Title I facility.
(c) Evaluations of specific programs within Title I

Facilities: Office space, calculator and desk computer, all student data from the Title I Program and from the Wilmington Public Schools

RESULTS

Even though the academic year has ended it is too soon to give any definitive report of the results. In the final analysis the results may not be known for years.

Of the twelve supported trainees, four have received the Ed.D. degree and have therefore officially completed the program. These four together with the titles of their dissertations are listed herewith.

Mary A. Conahan: The Comparative Accuracy of the Likelihood Ratio and X^2 as Approximations to the Exact Multinomial Test

David L. March: Accuracy of the Chi-Square Approximation for 2 X 3 Contingency Tables with Small Expectations

Calvin W. Moats: Validation of Ten Indicators of School Effectiveness Identified by the Intermediate Unit Planning Study

Donald F. Puglisi: The Differential Effects of Supplemental Self-Instruction on Student Achievement in Mathematics

Of the remaining eight supported trainees, the following seven have had dissertation proposals approved and are in the process of completing the work thereon. These seven together with their dissertation titles are given herewith.

John R. Bolig: Sex Segregated Kindergartens as a Means of Reducing the Number of Problems Children Encounter in School

James R. Campbell: The Effect of Treating Oral Language Deficiencies on Reading Achievement

Rita A. Hegedus: The Formation and Sequencing of Mathematical Concepts in Children

John G. Krupka: An Investigation of Factors Associated with Attrition and with Achievement of Above and Below Expectations of Community College Freshmen

Edward H. Lareau: Comparison of Two Methods of Teaching Expository Composition and Evaluation of a Testing Instrument

Jeanne W. Mohrmann: The Use of the Delphi Technique to Establish Goals for Public Education in Delaware

Alice L. Valdes: The Effects of Training in Auditory and Visual Discrimination on Reading Readiness in the Culturally Disadvantaged

Mr. Bartol has yet to settle upon an appropriate topic.

CONCLUSIONS

The results speak for themselves. It is concluded that the program has been successful and that the trainees are well qualified to do meaningful educational research.

It is recommended that a two year doctoral program is too short and that an extra year would be of considerable benefit.